

1 **In the Claims**

2 Claims 16, 26, and 29 are amended.

3 Claims 16-23 and 25-58 remain in the application and are listed below.

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5 1.-15. (Cancelled)

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7 16. (Currently Amended) A web content adaptation method comprising:
8 analyzing one or more functions associated with a webpage that is
9 configured for presentation on a first device type, said analyzing being performed
10 by generating one or more function-based object models that represent objects
11 comprising the webpage,

12 said objects comprising:

13 one or more basic objects associated with the webpage, basic
14 objects comprising a smallest information body that cannot be
15 further divided, said one or more basic objects being configured to
16 perform one or more of the following functions: (1) providing
17 semantic information, [(1)] (2) navigating to other objects, (3)
18 providing a visual effect on the webpage, and (4) enabling user
19 interaction; and

20 one or more composite objects associated with the webpage,
21 composite objects comprising objects that contain other objects, said
22 one or more composite objects having a clustering function that is
23 associated with a webpage author's intention; and

1 based on said analyzing, adapting the webpage for presentation on a second
2 device type that is different from the first device type, ~~wherein said adapting~~
3 ~~comprises applying one or more rules to said function-based object models.~~

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5 17. (Original) The method of claim 16, wherein said generating of the
6 one or more function-based object models comprises generating multiple function-
7 based object models each of which being generated as a function of multiple
8 different properties that can be associated with associated objects.
9

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11 18. (Original) The method of claim 16, wherein said generating of the
12 one or more function-based object models comprises generating at least one
13 function-based object model for a basic object, said at least one function-based
14 object model being generated as a function of one or more of the following
15 properties: (1) a presentation property that defines a way in which the object is
16 presented, (2) a semantic property associated with content of an object, (3) a
17 decoration property pertaining to an extent to which the basic object serves to
18 decorate the webpage, (4) a hyperlink property pertaining to an object to which the
19 basic object points via a hyperlink, and (5) an interaction property pertaining to an
interaction method of the basic object.
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1 19. (Original) The method of claim 16, wherein said generating of the
2 one or more function-based object models comprises generating at least one
3 function-based object model for a composite object, said at least one function-
4 based object model being generated as a function of one or more of the following
5 properties: (1) a clustering relationship property pertaining to a relationship among
6 root children of the composite object, and (2) a presentation relationship property
7 pertaining to a presentation order associated with the root children of the
8 composite object.

9

10 20. (Original) The method of claim 16, wherein said generating of the
11 one or more function-based object models comprises generating at least one
12 specific function-based object model that serves to categorize an object.

13

14 21. (Original) The method of claim 20, wherein said generating of said
15 at least one specific function-based object model comprises, for a basic object,
16 generating said at least one specific function-based object model based upon
17 properties of the basic object and properties associated with any father or brother
18 objects.

19

20 22. (Original) The method of claim 20, wherein said generating of said
21 at least one specific function-based object model comprises, for a composite
22 object, generating said at least one specific function-based object model based
23 upon properties of the composite object and any of its root children.

1 23. (Original) The method of claim 20, wherein said generating of said
2 at least one specific function-based object model comprises using a rule-based
3 decision tree to ascertain a category of an object.

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5 24. (Cancelled)

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7 25. (Previously Amended) One or more computer-readable storage
8 media having computer-readable instructions thereon which, when executed by
9 one or more processors, cause the one or more processors to implement the
10 method of claim 16.

11

12 26. (Currently Amended) A web content adaptation method comprising:
13 analyzing one or more functions associated with a webpage by generating
14 one or more function-based object models that represent objects comprising the
15 webpage,

16 said objects comprising:

17 one or more basic objects associated with the webpage, basic
18 objects comprising a smallest information body that cannot be
19 further divided, said one or more basic objects being configured to
20 perform one or more of the following functions: (1) providing
21 semantic information, [[(1)]] (2) navigating to other objects, (3)
22 providing a visual effect on the webpage, and (4) enabling user
23 interaction; and

24 one or more composite objects associated with the webpage,
25 composite objects comprising objects that contain other objects, said

1 one or more composite objects having a clustering function that is
2 associated with a webpage author's intention; and
3 based on said analyzing, adapting the webpage for presentation on a device,
4 wherein said adapting comprises applying one or more rules to said function-based
5 object models.

6

7 27. (Original) The method of claim 26, wherein said adapting comprises
8 doing so in view of one or more networking conditions.

9

10 28. (Original) The method of claim 26, wherein said adapting comprises
11 doing so in view of one or more user preferences.

12

13 29. (Currently Amended) One or more computer-readable storage media
14 having computer-readable instructions thereon which, when executed by one or
15 more processors, cause the one or more processors to:

16 analyze one or more functions associated with a webpage that is configured
17 for presentation on a first device type by generating one or more function-based
18 object models that represent objects comprising the webpage,

19 said objects comprising:

20 one or more basic objects associated with the webpage, basic
21 objects comprising a smallest information body that cannot be
22 further divided, said one or more basic objects being configured to
23 perform one or more of the following functions: (1) providing
24 semantic information, [(1)] (2) navigating to other objects, (3)
25 providing a visual effect on the webpage, and (4) enabling user

1 interaction; and

2 one or more composite objects associated with the webpage,
3 composite objects comprising objects that contain other objects, said
4 one or more composite objects having a clustering function that is
5 associated with a webpage author's intention;

6 said generating of the one or more function-based object models
7 comprising generating at least one function-based object model for a basic
8 object, said at least one function-based object model being generated as a
9 function of one or more of the following properties: (1) a presentation
10 property that defines a way in which the object is presented, (2) a
11 semantic property associated with content of an object, (3) a decoration
12 property pertaining to an extent to which the basic objects serves to
13 decorate the webpage, (4) a hyperlink property pertaining to an object to
14 which the basic object points via a hyperlink, and (5) a interaction property
15 pertaining to an interaction method of the basic object;

16 said generating further comprising generating at least one function-
17 based object model for a composite object, said at least one function-based
18 object model for the composite object being generated as a function of one
19 or more of the following properties: (1) a clustering relationship property
20 pertaining to a relationship among root children of the composite object,
21 and (2) a presentation relationship property pertaining to a presentation
22 order associated with the root children of the composite object;

23 said generating further comprising generating at least one specific
24 function-based object model that serves to categorize an object by:

25 for a basic object, generating said at least one specific

1 function-based object model based upon properties of the basic object and
2 properties associated with any father or brother objects; and

3 for a composite object, generating said at least one specific
4 function-based object model based upon properties of the composite object
5 and any of its root children; and

6 based upon an analysis of said one or more functions, adapt the webpage
7 for presentation on a second device type that is different from the first device type,
8 wherein said adapting comprises applying one or more rules to said function-based
9 object models.

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11 30. (Previously Amended) The one or more computer-readable storage
12 media of claim 29, wherein said instructions cause the one or more processors to
13 adapt the webpage for presentation on a WAP (Wireless Application Protocol)-
14 enabled device.

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16 31. (Original) A web content adaptation method comprising:
17 receiving multiple web pages that are configured for display on a first
18 device type;

19 processing the multiple web pages to provide multiple different objects
20 associated with the webpages, individual objects having one or more properties
21 relating to functions of the individual object;

22 applying one or more rules to the objects sufficient to provide multiple
23 different webpages that are configured for display on a second device type that is
24 different from the first device type.

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2 32. (Original) The method of claim 31, wherein the individual objects
3 can have a presentation property that defines a way in which the object is
4 presented.

5
6 33. (Original) The method of claim 31, wherein the individual objects
7 can have a semanteme property associated with the content of an object.

8
9 34. (Original) The method of claim 31, wherein the individual objects
10 can have a decoration property pertaining to the extent to which an object serves to
11 decorate a webpage.

12
13 35. (Original) The method of claim 31, wherein the individual objects
14 can have a hyperlink property pertaining to an object to which another object
15 points via a hyperlink.

16
17 36. (Original) The method of claim 31, wherein the individual objects
18 can have a interaction property pertaining to an interaction method of an object.

19
20 37. (Original) The method of claim 31, wherein the individual objects
21 can have a clustering relationship property pertaining to a relationship among any
22 root children of an object.

1 38. (Original) The method of claim 31, wherein the individual objects
2 can have a presentation relationship property pertaining to a presentation order
3 associated with any root children of an object.

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5 39. (Original) The method of claim 31, wherein said processing
6 comprises defining a representation of an object that includes any children of said
7 object.

8

9 40. (Original) The method of claim 31, wherein said processing
10 comprises assigning a category to one or more objects.

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12 41. (Original) The method of claim 40, wherein said assigning
13 comprises using a rule-based decision tree to ascertain a category for said one or
14 more objects.

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16 42. (Original) The method of claim 40, wherein said assigning
17 comprises assigning a category from a set of object categories comprising: (1) an
18 information object that presents content information, (2) a navigation object that
19 provides a navigation function, (3) an interaction object that provides for user
20 interaction, (4) a decoration object that serves a decoration function, (5) a special
21 function object that performs a defined function, and (6) a page object that is
22 associated with presentation of related information.

1 43. (Original) A web content adaptation method that adapts web content
2 from one format to another, and which uses multiple function-based object models
3 to do so, where the function-based object models comprise models that pertain to
4 (1) basic objects that comprise a smallest information body that cannot be further
5 divided, and (2) composite objects that comprise objects that can contain other
6 objects.

7

8 44. (Original) The web content adaptation method of claim 43, wherein
9 the function-based object models are generated as a function of one or more
10 properties associated with the objects.

11

12 45. (Original) A system for adapting web content from one format to
13 another comprising one or more function-based object models, individual
14 function-based object models representing objects that are present in a webpage in
15 terms of one or more of an object's functional properties.

16

17 46. (Original) The system of claim 45, wherein one of the properties
18 comprises a presentation property that defines a way in which the object is
19 presented.

20

21 47. (Original) The system of claim 45, wherein one of the properties
22 comprises a semanteme property associated with the content of an object.

1 48. (Original) The system of claim 45, wherein one of the properties
2 comprises a decoration property pertaining to the extent to which an object serves
3 to decorate a webpage.

4

5 49. (Original) The system of claim 45, wherein one of the properties
6 comprises a hyperlink property pertaining to an object to which another object
7 points via a hyperlink.

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9 50. (Original) The system of claim 45, wherein one of the properties
10 comprises a interaction property pertaining to an interaction method of an object.

11

12 51. (Original) The system of claim 45, wherein one of the properties
13 comprises a clustering relationship property pertaining to a relationship among any
14 root children of an object.

15

16 52. (Original) The system of claim 45, wherein one of the properties
17 comprises a presentation relationship property pertaining to a presentation order
18 associated with any root children of an object.

19

20 53. (Previously Amended) Software code embodied on a computer-
21 readable storage medium that implements the system of claim 45.

22

23 54. (Original) A computer architecture for use in adapting web content
24 for display on a computing device, the architecture comprising:
25 an analysis module for receiving at least one webpage and processing the

1 one webpage to produce one or more function-based object models that describe
2 functional properties of objects that are contained in the one webpage;

3 one or more rules modules that contain rules that are to be used to adapt
4 content contained in the webpage; and

5 a content adaptation module configured to process the one or more
6 function-based object models in accordance with one or more rules contained in
7 the one or more rules modules to produce a new web page that has been adapted
8 from the one web page.

9
10 55. (Previously Presented) The computer architecture of claim 54,
11 wherein the content adaptation module is configured to produce a new web page
12 for display on a WAP (Wireless Application Protocol)-enabled device.

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14 56. (Original) The computer architecture of claim 54, wherein said
15 analysis module is configured to produce function-based object models that
16 pertain to both basic objects and composite objects,

17 basic objects comprising a smallest information body that cannot be further
18 divided; and

19 composite objects comprising objects that contain other objects.

1 57. (Original) The computer architecture of claim 56, wherein said
2 analysis module is configured to produce, for basic objects, function-based object
3 models that comprise values associated with the following properties: (1) a
4 presentation property that defines a way in which the object is presented, (2) a
5 semantic property associated with content of an object, (3) a decoration property
6 pertaining to an extent to which the basic objects serves to decorate the webpage,
7 (4) a hyperlink property pertaining to an object to which the basic object points via
8 a hyperlink, and (5) a interaction property pertaining to an interaction method of
9 the basic object.

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11 58. (Original) The computer architecture of claim 56, wherein said
12 analysis module is configured to produce, for composite objects, function-based
13 object models that comprise values associated with the following properties: (1) a
14 clustering relationship property pertaining to a relationship among root children of
15 the composite object, and (2) a presentation relationship property pertaining to a
16 presentation order associated with the root children of the composite object.

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